CLAIMS

We claim:

1. A method of calibrating an active noise control system, comprising:

selecting at least one noise source sound as a calibration reference.

2. The method of claim 1, including selecting a plurality of dominant order noise source sounds.

3. The method of claim 1, including determining the system response to the sound, determining a harmonic representation of the determined response and using the determined harmonic representation as the calibration reference.

4. The method of claim 3, including subsequently determining an actual harmonic representation of the system response to the same sound and determining whether the actual harmonic representation corresponds to the calibration reference.

5. The method of claim 4, wherein the system response comprises a microphone signal indicative of a sound detected by the microphone.

6. The method of claim 3, wherein the noise source is a vehicle engine and including determining the harmonic representation at a plurality of engine speeds and a plurality of throttle conditions.

7. The method of claim 1, wherein the noise source is a vehicle engine having a number of cylinders and the selected sound is from a dominant order which is a factor applied to the number of cylinders.

8. The method of claim 7, wherein the factor is ½.

9. The method of claim 1, including estimating the noise source sound as an inverse of a produced cancellation signal.

10. The method of claim 1, including estimating the noise source sound as the difference between a system response to the noise source sound and a produced cancellation signal.

11. A noise control system, comprising:

a microphone that detects a sound;

a speaker; and

a controller that drives the speaker to selectively generate a noise cancellation signal and interprets a signal from the microphone indicating a resulting system response to a combination of a noise source sound and the noise cancellation signal, the controller using at least one noise source sound as a calibration reference.

12. The system of claim 11, wherein the controller uses a plurality of dominant order noise source sounds.

13. The system of claim 11, wherein the controller determines the system response and a harmonic representation of the determined response, the controller using the determined harmonic representation as the calibration reference.

14. The system of claim 13, wherein the controller determines an actual harmonic representation of the system response at a selected time and determines whether the actual harmonic representation corresponds to the calibration reference.

15. The system of claim 13, wherein the noise source is a vehicle engine and the controller determines the harmonic representation at a plurality of engine speeds and a plurality of throttle conditions.

16. The system of claim 11, wherein the noise source is a vehicle engine having a number of cylinders and the calibration reference sound is from a dominant order which is a factor applied to the number of cylinders.

17. The system of claim 16, wherein the factor is ½.

18. The system of claim 11, wherein the controller estimates the noise source sound as an inverse of a produced cancellation signal.

19. The system of claim 11, wherein the controller estimates the noise source sound as the difference between the system response to the noise source sound and a produced cancellation signal.

20. The system of claim 19, wherein the system response comprises a signal from the microphone.